

***ECTOPRIA LEECHI*, A NEW FALSE WATER PENNY FROM THE
UNITED STATES (COLEOPTERA: EUBRIIDAE)**

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The family name Eubriidae, representing the false water penny beetles, is probably unfamiliar to most coleopterists. The genera included here have been placed with the Dascillidae (Leng, 1920; Arnett, 1968) or, especially, the Psephenidae (Leech and Chandler, 1956; Leech and Sanderson, 1959; Brown, 1972; Doyen and Ulrich, 1978). Bertrand (1972) points out that a number of earlier investigators established *Ectopria* LeConte and related genera (*Acneus* Horn and, presumably, *Alabameubria* Brown and *Dicranopselaphus* Guérin-Méneville in North America) as a distinct family. *Ectopria* is included in the Eubriidae by Bertrand (1972) and Brigham (1981).

Ectopria has long been considered monospecific in the United States, with *Ectopria thoracica* (Ziegler, 1844), *Ectopria tarsalis* LeConte 1853, and *Ectopria tibialis* LeConte 1853 being considered synonymous with *Ectopria nervosa* (Melsheimer, 1844). The genus currently is under revision by this author. Preliminary observations indicate that both *Ectopria nervosa* and *Ectopria thoracica* are valid species and that one new species, described below, occurs in the United States.

***Ectopria leechi*, new species**

Holotype male.—Pear-shaped, widest approximately $\frac{2}{3}$ distance from humeral region of elytra to apex (Fig. 1). Greatest width 2.01 mm; greatest length 3.30 mm. *Head*: Maximum width through eyes 0.72 mm, minimum width between eyes 0.33 mm; surface of vertex and frons granular, purplish-black, darker around eye; ventral projection between bases of antennae excavated between and especially below antennae, with a distinct margin, purplish-black anteriorly, margin darker, light brown laterally and ventrally; mouthparts testaceous. *Antenna*: Serrate (Fig. 4); basal segment trapezoidal, glabrous; segment 2 cylindrical, glabrous; segments 3 through 10 triangular, dull, with numerous short setae and a few long hairs ventrally; segment 11 elongate-oval, dull, with numerous short setae and longer hairs; lengths of segments (from basal segment) 0.24 mm, 0.05 mm, 0.21 mm, 0.24 mm, 0.24 mm, 0.24 mm, 0.24 mm, 0.24 mm, 0.23 mm, 0.21 mm, 0.30 mm; color light brown, darker dorsally, the basal segment darker brown. *Pronotum*: Width at apex 0.90 mm, width at base 1.59 mm, length along midline 0.81 mm; surface granular, densely covered with appressed silvery hairs



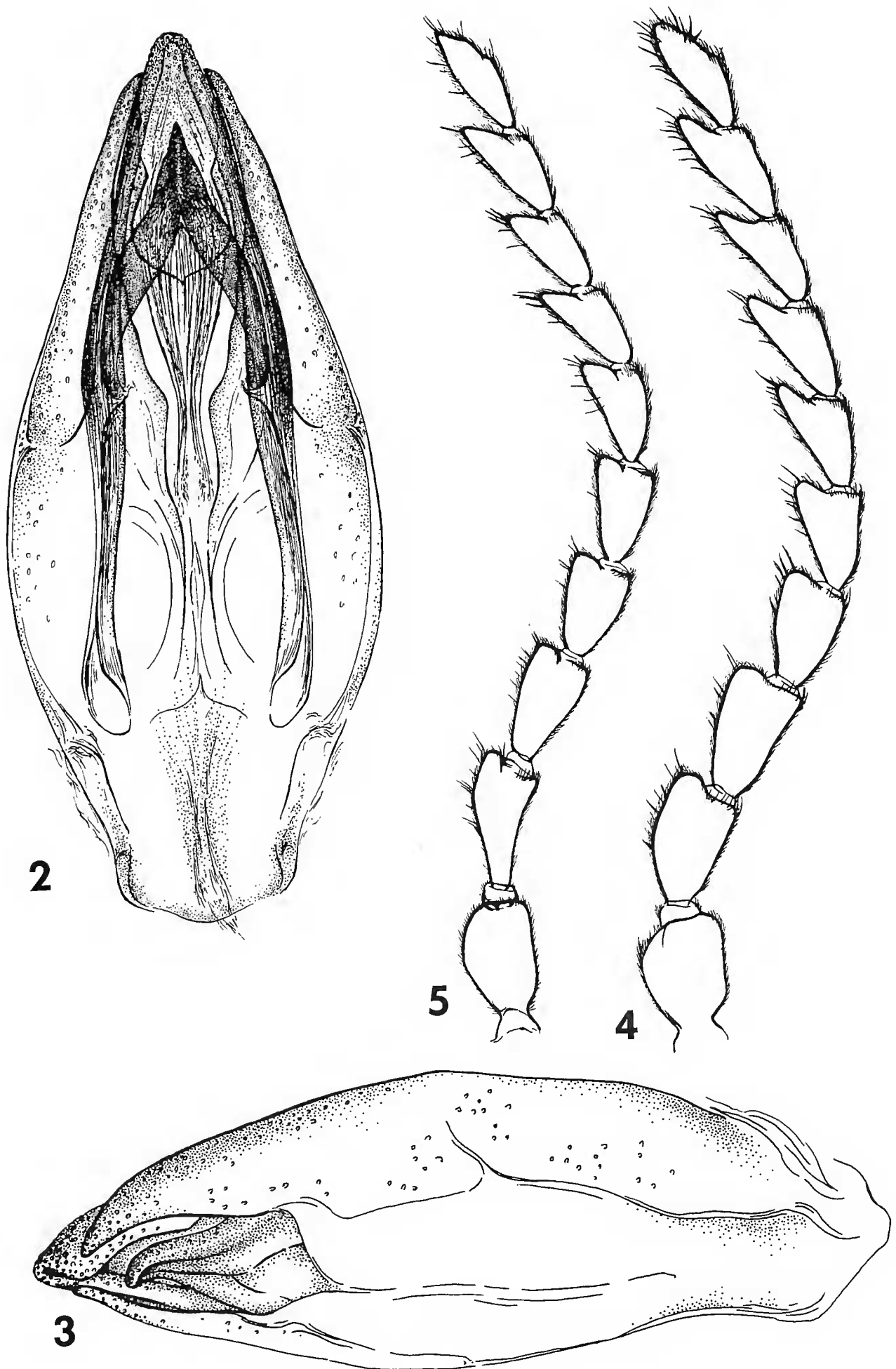
Fig. 1. *Ectopria leechi*, holotype male, habitus.

except along anterior margin; distinctly margined laterally, finely margined anteriorly, posterior margin crenulate; disc strongly inflated above plane of anterior and posterior margins, somewhat inflated posterolaterally; a pair of shallow foveae near basal margin, each fovea located just laterad of lateral margin of scutellum; color light brown with margins, disc, and a spot laterad from each fovea darker brown, clouded with darker brown from disc to lateral margin. *Scutellum*: Obtusely triangular; width at base 0.36 mm, width

along midline 0.24 mm; surface shining, densely covered with appressed silvery hairs; basal margin straight, crenulate; lateral margins curved, converging to form obtuse angle; color light brown, darker along lateral margins, basal margin dark brown. *Elytron*: Surface, in part, coarsely granulate, the coarse granules confined to slightly impressed vermiculations, remainder of elytral surface finely granulate, densely covered with appressed silvery hairs; anterior margin crenulate from suture to humeral region; distinctly margined in humeral region, laterally, and apically; faintly margined suturally; lateral margin reflected, more strongly so anteriorly; color very light brown, becoming darker basally where it matches light brown of pronotum, margins very dark brown, vermiculations dark brown, elytron with four longitudinal dark brown lines extending toward, but not reaching, apex, sutural line arising from scutellum, discal lines arising from near base of elytron, humeral line arising from base of elytron, lines anastomosing posteriorly as in Figure 1. *Venter*: Densely covered with appressed silvery hairs; prosternum with surface finely granulate, margin beaded except along prosternal process, prosternal process parallel-sided, extending posteriorly to base of fore trochanter, slightly concave ventrally, truncate apically, coloration light brown, darker posteriorly, margin and prosternal process dark brown; mesosternal process trapezoidal, deeply concave, truncate apically, with a few coarse granulations, extending posteriorly to base of middle trochanter, coloration light brown with lateral margin darker, mesepisternum dark brown; metasternum transversely excavated at base, below plane of apex of mesosternal process, color light brown, except metepisternum dark brown, elongate glabrous area posteriorly along midline; abdomen light brown, darker laterally, apical sternite with a pair of foveae laterally along basal margin. *Legs*: Testaceous, densely covered with appressed silvery hairs, hairs thinning along dorsal surfaces of femora; fore coxa ovate, middle coxa conical, hind coxa transverse, remaining leg-segment measurements as follows (in mm)

segment	leg		
	fore	middle	hind
trochanter	0.18	0.21	0.18
femur	0.69	0.75	0.81
tibia	0.72	0.78	0.81
tarsus (base)	0.15	0.20	0.23
tarsus (2nd)	0.11	0.12	0.12
tarsus (3rd)	0.09	0.09	0.09
tarsus (4th)	0.08	0.08	0.08
tarsus (apex)	0.24	0.24	0.24

Genitalia: Trilobed (Figs. 2, 3); maximum length of sclerotized parts 723 μ , maximum width 289 μ ; aedeagus complex, with two parts, dorsal piece V-



Figs. 2-5. *Ectopria leechi*: Fig. 2, holotype male, genitalia, dorsal aspect. Fig. 3, holotype male, genitalia (from below). Fig. 4, holotype male, antenna. Fig. 5, allotype female, antenna.

shaped, length 553 μ , width at base 182 μ , apparently articulating anteriorly with parameres, apex bluntly rounded, with coarse punctures, concave ventrally and receiving apex of ventral piece, extending 31 μ beyond apices of parameres, ventral piece V-shaped, length 201 μ , width at base 132 μ , apparently articulating anteriorly with midpoint of dorsal piece, apex sharply rounded, curving ventrally and received by concave ventral surface of apex of dorsal piece, terminating 54 μ proximal to apices of parameres; parameres with membranous dorsal and ventral margins forming sheath around aedeagus, apices closely applied to lateral margins of dorsal piece of aedeagus.

Allotype female.—Similar to holotype except antenna less serrate, especially basally (Fig. 5). Greatest length 4.4 mm, greatest width 2.5 mm.

Variation.—Gross variation within the type series of *Ectopria leechi* is limited to the longitudinal anastomosing lines on the elytra, being less distinct in older specimens; the coloration of the antennae and legs, varying from testaceous to light brown; and the body measurements. Twenty-nine males ranged in length from 2.8 mm to 3.6 mm (mean length 3.15 mm \pm 0.21 mm) and in width from 1.7 mm to 2.0 mm (mean width 1.87 mm \pm 0.12 mm). Twenty-one females ranged in length from 3.6 mm to 4.9 mm (mean length 4.08 mm \pm 0.34 mm) and in width from 2.5 mm to 2.9 mm (mean width 2.57 mm \pm 0.13 mm). Body proportions were roughly similar between males and females, though the females were distinctly larger. The width of 20 males averaged 0.602 \pm 0.022 times the length. The width of 10 females averaged 0.615 \pm 0.033 times the length.

Diagnosis.—Pear-shaped medium-sized *Ectopria* which keys to *Ectopria nervosa* in Brown (1972) and keys to *Ectopria* and most closely fits *Ectopria nervosa* in Brigham (1981). It is distinct from other *Ectopria* in coloration (Fig. 1) and in the distinctive type of male genitalia (Figs. 2, 3). Legs and antennae testaceous or light brown, pronotum light brown with margins, disc, and a spot laterad from each basal fovea darker brown, clouded with darker brown from disc to lateral margin; elytron light brown with distinct dark brown vermiculations and four longitudinal dark brown anastomosing lines extending toward apex; male genitalia broad, 0.4 times as wide as long, parameres nearly straight apically, smooth, without subapical callosities. The following modifications of Brigham's (1981) key are necessary to include the new species.

1. Elytron light brown with distinct dark brown vermiculations and four dark brown anastomosing lines extending toward apex (Fig. 1); legs and antennae testaceous or light brown; aedeagus broad, 0.4 times as wide as long, without subapical callosities (Figs. 2, 3) *Ectopria leechi* Brigham, new species
- Elytron uniformly brownish-black or black or dull dusky reddish-brown with faint dark vermiculations, without longitudinal dark

- anastomosing lines; legs and antennae brown or black, although tarsi may be lighter; aedeagus elongate, 0.26 times as wide as long or 0.32 times as wide as long with distinct subapical callosities on parameres 2
2. Pronotum bicolored, yellow or gold laterally, dusky or black medially; elytron uniformly brownish-black or black; aedeagus very elongate, 0.26 times as wide as long *Ectopria thoracica* (Ziegler)
- Pronotum uniformly black or brown; elytron dull dusky reddish-brown with faint dark vermiculations; aedeagus elongate, 0.32 times as wide as long, parameres with distinct subapical callosities *Ectopria nervosa* (Melsheimer)

Distribution.—Holotype ♂ ILLINOIS, Ogle Co., White Pines St. Pk., Trib. of Pine Cr. in youth campground, 27 June 1972 #35, W. U. Brigham & M. W. Sanderson; Allotype ♀ ILLINOIS, Boone Co., North Kinnickinick Cr. at Boone Co. Conserv. area, 26 June 1972 # 22, W. U. Brigham & M. W. Sanderson; Paratypes 1 ♂ ARKANSAS, Washington Co., 2 July 1939, M. W. Sanderson; CONNECTICUT, 1 ♂ [Litchfield Co.], Cornwall, 7 June 1925, sweeping field, L. B. Woodruff Coll. Acc. 26824; ILLINOIS, 1 ♂, 2 ♀♀ same data as holotype; 1 ♀ same data as allotype; 1 ♀ Winnebago Co., Trib. of North Branch Otter Cr. 2 km NE of Durand, 26 June 1972 #23, W. U. Brigham & M. W. Sanderson; INDIANA, 1 ♂, 1 ♀ [Floyd Co.], Edwardsville; 3 ♂♂ Chas. Palm Coll. Acc. 5409; KENTUCKY, 3 ♂♂, 4 ♀♀ [Jefferson Co.], Louisville, 3 June, H. Soltau Coll.; 1 ♀ [Jefferson Co.], Louisville, 22 June, H. Soltau Coll.; 1 ♂, 1933, H. F. Wickham Coll.; MICHIGAN, 1 ♂ Midland Co., 1 July 1936, R. R. Dreisbach; PENNSYLVANIA, 1 ♂, 1 ♀ [Lehigh Co.], Bethlehem, 20 June 1933, H. F. Wickham; NO LOCALITY, 15 ♂♂, 9 ♀♀ #3995.

Distribution of other specimens of Ectopria leechi, but not designated as paratypes.—CONNECTICUT, 1 ♀ [Litchfield Co.], Goshen, 5 July 1925, Chamberlain; KENTUCKY, 3 ♀♀ [Franklin Co.], Frankfort, 9 June, H. Soltau Coll.; NEW YORK, 1 ♀ [Erie Co.], Lancaster, 4 June 1911, M. C. Van Duzee, C. A. Frost Coll.; OKLAHOMA, 1 ♀ [Ottawa Co.], Wyandotte, 19 June 1939, Kaiser-Nailon; VIRGINIA 4 ♀♀ Liebeck Coll. A single female bore no label other than a small blue-grey disc. LeConte used identical discs to designate specimens collected from the north shore of Lake Superior during his visit to the lake with Agassiz during the early 1840's. If this specimen is from LeConte material, it represents the northernmost record for *Ectopria leechi*. Figure 6 shows the distribution of *Ectopria leechi* based upon the type series and other known specimens listed above. No Virginia records have been plotted because the specimens labelled "VA" lacked more specific locality information.

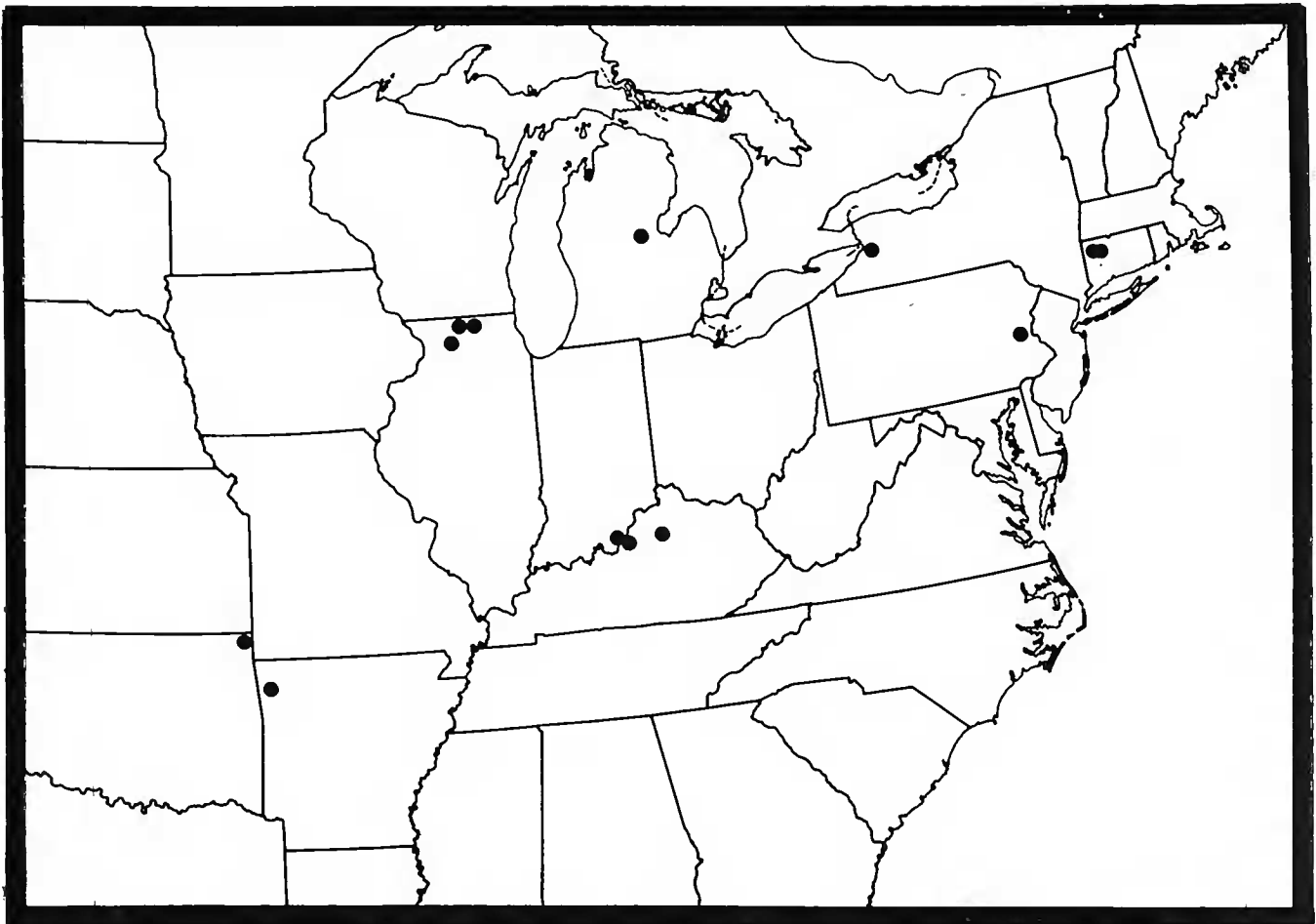


Fig. 6. Distribution of *Ectopria leechi* (also known from Virginia, but without specific locality).

The holotype and allotype are in the collection of the Illinois Natural History Survey. Paratypes are in the collections of or have been distributed to the American Museum of Natural History, California Academy of Science, Field Museum of Natural History, Museum of Comparative Zoology, National Museum of Natural History, and Stovall Museum of Science and History.

Etymology.—The epithet *leechi* honors Hugh B. Leech for his many contributions to the study of aquatic Coleoptera.

Habitat.—All Illinois specimens of *Ectopria leechi* came from small, swift-flowing streams. Stream width ranged from 1 m to 2 m and depth ranged up to 10 cm. Water temperatures were cool for the localities and time of year ranging from 15°C to 17°C. Substrate composition ranged from mud-sand to cobble riffles. Surrounding countryside was predominantly gently rolling agricultural land with a narrow belt of young trees along the streams. The type-locality, however, was open woodland. One stream bank here was a sheer rock bluff approximately 10 m high.

Adults from the type-locality were taken by sweeping insects from the

moist undersurfaces of a log and rocks closely overhanging the stream. Adults from other localities presumably were taken from streamside grasses growing down into the water.

Ectopria larvae believed to be *Ectopria leechi* were taken from the undersurfaces of cobble-sized rocks in riffles. They appeared to be gregarious in that a few rocks yielded most of the specimens. These larvae were taken in association with the dryopoid genera *Dubiraphia*, *Helichus*, *Optioservus*, and *Stenelmis*.

The illustrations were prepared by Ms. Aleta A. Holt of the Illinois Natural History Survey.

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